

**Contents**

Volumes 212 / 213

**Special Issue: Proceedings of the  
3<sup>rd</sup> ILAS Conference**

PREFACE . . . . .	1
NICHOLAS J. HIGHAM (Manchester, England) The Matrix Sign Decomposition and Its Relation to the Polar Decomposition . . . . .	3
JEAN DAZORD (Villeurbanne Cedex, France) On the C-Numerical Range of a Matrix . . . . .	21
THOMAS H. PATE (Auburn, Alabama) Inequalities Involving Immanants . . . . .	31
TOMAŽ KOŠIR (Calgary, Alberta, Canada) Finite-Dimensional Multiparameter Spectral Theory: The Nonderogatory Case . . . . .	45
CHI-KWONG LI (Williamsburg, Virginia) Some Aspects of the Theory of Norms . . . . .	71
ZHONGSHAN LI, FRANK HALL, AND CAROLYN ESCHENBACH (Atlanta, Georgia) On the Period and Base of a Sign Pattern Matrix . . . . .	101
WASIN SO (Huntsville, Texas) Commutativity and Spectra of Hermitian Matrices . . . . .	121
PAUL VAN DOOREN AND J. SREEDHAR (Urbana, Illinois) When is a Periodic Discrete-Time System Equivalent to a Time-Invariant One? . . . . .	131
DIANNE P. O'LEARY (College Park, Maryland) AND A. YEREMIN (Moscow, Russia) The Linear Algebra of Block Quasi-Newton Algorithms . . . . .	153
A. C. M. RAN AND D. TEMME (Amsterdam, the Netherlands) Dissipative Matrices and Invariant Maximal Semidefinite Subspaces . . . . .	169
PETER KUNKEL (Oldenburg, Germany) AND VOLKER MEHRMANN (Chemnitz, Germany) A New Look at Pencils of Matrix Valued Functions . . . . .	215
ROBERT M. GURALNICK (Los Angeles, California) Invertible Preservers and Algebraic Groups . . . . .	249

*Table of Contents continued*

N'EKWUNIFE MUONEKE (Prairie View, Texas) Doubly Stochastic Powers of Nonnegative Irreducible Matrices . . . . .	259
MARK KRUPNIK (Haifa, Israel) AND LEIBA RODMAN (Williamsburg, Virginia) Completions of Partial Jordan and Hessenberg Matrices . . . . .	267
JERROLD W. GROSSMAN (Rochester, Michigan), DEVADATTA M. KULKARNI (Prune, India), AND IRWIN E. SCHOCHETMAN (Rochester, Michigan) Algebraic Graph Theory Without Orientation . . . . .	289
DANIEL HERSHKOWITZ (Haifa, Israel) Paths in Directed Graphs and Spectral Properties of Matrices . . . . .	309
SCOTT H. HOCHWALD (Jacksonville, Florida) Multiplicative Maps on Matrices That Preserve the Spectrum . . . . .	339
R. B. BAPAT (New Delhi, India) König's Theorem and Bimatroids . . . . .	353
J. A. DIAS DA SILVA (Lisboa, Portugal), DANIEL HERSHKOWITZ (Haifa, Israel), AND HANS SCHNEIDER (Madison, Wisconsin) Existence of Matrices With Prescribed Off-Diagonal Block Element Maxima . . . . .	367
LEROY B. BEASLEY (Logan, Utah), GWANG-YEON LEE (Seosan, Korea), AND SANG-GU LEE (Suwon, Korea) Linear Transformations That Preserve the Assignment . . . . .	387
JEFFREY L. STUART (Hattiesburg, Mississippi) AND JAMES R. WEAVER (Pensacola, Florida) Diagonally Scaled Permutations and Circulant Matrices . . . . .	397
RIAZ A. USMANI (Winnipeg, Manitoba, Canada) Inversion of a Tridiagonal Jacobi Matrix . . . . .	413
CHARLES R. JOHNSON, DAVID P. STANFORD (Williamsburg, Virginia), D. DALE OLESKY, AND P. VAN DEN DRIESSCHE (Victoria, British Columbia, Canada) Dominant Eigenvalues Under Trace-Preserving Diagonal Perturbations . . . . .	415
EUGENE M. RUSSAKOVSKII (Kharkov, Ukraine) The Theory of V-Bezoutians and Its Applications. . . . .	437

*Table of Contents continued*

ION ZABALLA (Vitoria-Gasteiz, Spain)	
Similarity and Block Similarity . . . . .	461
J. DING (Hattiesburg, Mississippi) AND	
L. J. HUANG (Rockford, Illinois)	
On the Perturbation of the Least Squares Solutions	
in Hilbert Spaces . . . . .	487
JAVAD FAGHIH-HABIBI (New Concord, Ohio)	
The Spherical Gap of the Graph of a Linear Transformation . . . . .	501
A. V. PESTEREV AND G. A. TAVRIZOV (Moscow, Russia)	
On Inversion of Some Meromorphic Matrices . . . . .	505
MEI-QIN CHEN (Charleston, South Carolina) AND	
CHICHIA CHIU (East Lansing, Michigan)	
Region-Dependent Optimal $m$ -Stage Runge-Kutta Schemes	
for Solving a Class of Nonsymmetric Linear Systems . . . . .	523
CONFERENCE REPORT . . . . .	547
AUTHOR INDEX . . . . .	553